Recipients of Grants

Following is a list of all recipients of grants approved by the Scientific Advisory Board since initial grants were made in late 1954. It should be noted that some of the projects have been completed.

GRANTEE AND INSTITUTION	PROJECT TITLE *("C" indicates project completed; "P" indicates a report has been published by the grantee)*
CLARENCE M. AGRESS, M.D., *Chief, Cardiovascular Laboratory*, Veterans Administration Center, Los Angeles, Cal.	Measurement of the functional status of the human heart by frequency spectrum analysis of its vibrational energy
D. MURRAY ANGEVINE, M.D., *Professor of Pathology*, University of Wisconsin Medical School, Madison, Wis.	Pathologic—anatomic study of cellular changes in human bronchi (C)
STEPHEN M. AYRES, M.D., *Director of Research, Department of Pulmonary Physiology*, Saint Michaels Hospital, Newark, N. J.	Measurement of alveolar-arterial nitrogen difference by gas chromatography
FREDERICK W. BARNES, JR., M.D., PH.D., *Associate Professor of Medicine and Physiological Chemistry*, Johns Hopkins University School of Medicine, Baltimore, Md.	The role of hyperplasia in tissue response to chronic damage (C—P)
RALPH S. BECKER, PH.D., *Associate Professor of Chemistry*, University of Houston, Houston, Tex.	An investigation of the spectral and chromatographic characteristics of aromatic hydrocarbons
SAMUEL BELLET, M.D., *Director, Division of Cardiology*, Philadelphia General Hospital, Philadelphia, Pa.	The effect of nicotine on cardiac irritation in the presence of reserpine, and the effect of nicotine on coronary blood flow of dogs with coronary insufficiency (C—P) Effects of nicotine on the morphology of coronary arteries and aorta; fibrinolytic effects of nicotine on human and animal plasma; effects of cessation of smoking on serum cholesterol levels of chronic smokers
RICHARD J. BING, M.D., *Professor of Medicine and Chairman, Department of Medicine*, Wayne State University College of Medicine, Detroit, Mich.	The effect of smoking on the coronary blood flow and certain phases of myocardial metabolism in patients with arteriosclerotic or hypertensive cardiovascular disease (P) Studies in cellular physiology of heart muscle (P) Measurement of coronary blood flow by means of radioactivated albumin The effect of smoking on coronary blood flow in patients with arteriosclerotic heart disease and the effect of nicotine on storage of amines in heart muscle (P)

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GRANTEE AND INSTITUTION	PROJECT TITLE
	Measurement of coronary blood flow with a system using coincidence counting; the effect of nicotine and change in heart rate on cardiac metabolism and related subjects
FRED G. BOCK, M.S., PH.D., *Senior Cancer Research Scientist*, Roswell Park Memorial Institute, Biological Station, Springville, N. Y. (see Moore)	Investigation of the biological effects of cigarette smoke (C—P)
JAMES F. BONNER, PH.D., *Professor of Biology*, California Institute of Technology, Pasadena, Cal.	Enzymatic study of methylation reactions in plant tissue (C—P)
TOM G. BOWERY, PH.D., *Pesticide Residue Laboratory, Chemistry Department*, North Carolina State College, Raleigh.	TDE and endrin residues in cigarette smoke (C—P)
JOSEF BROZEK, PH.D., *Professor and Chairman, Department of Psychology*, Lehigh University, Bethlehem, Pa.	Biological characteristics of men and their smoking habits (C—P)
F. M. BUTT, M.D., *Professor of Pathology*, University of Southern California School of Medicine; *Chief Pathologist*, Los Angeles County Hospital, Los Angeles	Pathologic—anatomic study of cellular changes in human bronchi (C) Study of trace metal storage of pulmonary and liver tissue by spectographic and chemical methods (C)
RICHARD U. BYERRUM, PH.D., *Professor of Chemistry*, Michigan State University, East Lansing	Biosynthesis of the pyridine ring of nicotine (P)
SISTER M. EMILY CAHILL, PH.D., *Chairman, Chemistry Department*, Regis College, Weston, Mass.	Comparison of analytical methods by determining the percent recovery of arsenic added at known levels to tobacco samples and a broad survey of the amount of arsenic present in tobacco samples from a wide variety of sources
WILLIAM H. CARNES, M.D., *Professor of Pathology*, University of Utah College of Medicine, Salt Lake City.	Pathologic—anatomic study of cellular changes in human bronchi (C)
LEOPOLD CERECEDO, PH.D., *Professor of Biochemistry and Nutrition*, University of Puerto Rico, School of Medicine, San Juan (formerly Professor of Biochemistry, Fordham University, New York, N. Y.)	A study of early chemical changes in the lungs of tumor-bearing rats and mice (C—P)
HANS T. CLARKE, D.Sc., *Professor of Biochemistry*, Columbia University College of Physicians and Surgeons, New York, N. Y. (retired, see Gottschall)	Proteolytic activities of the white blood cells of men and the effect on white blood cell activities of carcinogens, nutrition and other influences (C)
JAY D. COFFMAN, M.D., *Instructor in Medicine*, Massachusetts Memorial Hospitals, Boston.	The effect of tobacco smoking on nutritive skeletal muscle blood flow as determined by the radioisotope disappearance technique

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GRANTEE AND INSTITUTION	PROJECT TITLE
JULIUS H. COMROE, JR., M.D., *Director, Cardiovascular Research Institute*, University of California Medical Center, San Francisco.	The effect of smoking upon airway resistance (C—P) Analysis of case histories on emphysema
DEAN M. CONNORS, M.D., *Associate Director, Department of Laboratory Medicine*, St. Mary's Hospital, Madison, Wis.	A study of the alterations in the human bronchial wall occuring with aging, with particular emphasis on elastic tissue changes and associated changes in the bronchial lumen size
PHILIP COOPER, M.D., *Chief, Surgical Service*, Veterans Administration Hospital, Bronx, N. Y.; *Clinical Professor of Surgery*, Albert Einstein Medical College, Bronx.	A study of the effects of cigarette smoking on levels of gastric acid, pepsin and uropepsin (C—P) A study of the effect of extracts of tobacco on cultures of tumor and normal cells. Animal transplants of tumor tissue from tissue cultures (P) Study of combined effect of injected viral agents and environmental factors, including carcinogens and tobacco smoke, on the tracheobronchial tree and pulmonary parenchyma of experimental animals and on tissues in organ culture
ALBERT DAMON, M.D., PH.D., *Assistant Professor of Medical Anthropology, Department of Industrial Hygiene*, Harvard School of Public Health, Boston, Mass.	Body form, smoking, and alcohol consumption among Italian-American men (C—P)
R. F. DAWSON, PH.D., *Professor of Botany*, Columbia University, New York, N. Y.	An investigation of the metabolism of pyridine compounds in the tobacco plant (C—P)
ANDREW S. DIBNER, PH.D., *Executive, Psycho-Research*, The Age Center of New England, Inc., Boston, Mass. (see Whiskin)	Psychological and behavioral characteristics of inhalers among smokers (C)
EDWARD F. DOMINO, M.D., *Associate Professor of Pharmacology*, University of Michigan, Ann Arbor.	Effects of tobacco smoke and nicotine on the central nervous system (P)
JOHN W. ECKSTEIN, M.D., *Assistant Professor of Internal Medicine*, College of Medicine, State University of Iowa, Iowa City.	Responses of the peripheral veins in man to the intravenous administration of nicotine (P) Foot blood flow responses to smoking in the presence of hyperlipemia and hypertension
HANS L. FALK, PH.D., *Senior Research Associate, Department of Pathology*, University of Southern California School of Medicine, Los Angeles.	Examination of cigarette paper and cigarette smoke condensates for aromatic polycyclic hydrocarbons (C) A compilation of fluorescence spectra of polycyclic aromatic hydrocarbons and closely related compounds which are of interest in the study of air pollutants, and cigarette smoke in relation to lung cancer etiology (C—P) The effects of tobacco smoke condensate

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GRANTEE AND INSTITUTION	PROJECT TITLE
	on the defense mechanisms of the rat in detoxification of polycyclic aromatic hydrocarbons and the competitive inhibition between the polycyclic hydrocarbons in condensate with regard to carcinogenesis
	The physical and chemical properties of mucus under normal conditions and following exposure to aerosol irritants
DANA L. FARNSWORTH, M.D., *Henry K. Oliver Professor of Hygiene and Director of University Health Services*, Harvard University, Cambridge, Mass. (see Heath and McArthur)	Personality and smoking in college graduates: a fifteen-year follow-up study (C)
FRANK C. FERGUSON, JR., M.D., *Chairman, Department of Pharmacology*, Albany Medical College, Albany, N. Y.	Effects of tobacco smoke upon the function of the cardiovascular system in animals and man (C)
RUSSELL S. FISHER, M.D., *Chief Medical Examiner*, State of Maryland; *Professor of Legal Medicine*, University of Maryland Medical School, Baltimore.	Pathologic—anatomic study of cellular changes in human bronchi (C)
B. E. FREEDLANDER, M.D., *Director of Cancer Research*, Mount Zion Hospital and Medical Center, San Francisco, Calif. (deceased, see French)	Experiments on the possible carcinogenic and cocarcinogenic action of tobacco products (C—P)
FREDERICK A. FRENCH, A.B., *Research Associate*, Mount Zion Hospital and Medical Center, San Francisco, Calif. (see Freelander)	Carcinogenicity, cocarcinogenicity and anti-carcinogenicity of dietary factors in relation to pulmonary tumors. Possible interrelationship of tobacco bases and dietary factors. Chemical studies on pyridine bases including niacin analogs
JACK FREUND, M.D., *Assistant Professor of Pharmacology*, Medical College of Virginia, Richmond	Correlation of multitechnical procedures performed on the peripheral circulation of normal individuals in recumbent and erect positions and after exercise before and after sham and actual smoking (C)
	A study of the effects of cigarette smoking on the peripheral circulation of individuals with arteriosclerosis obliterans and other peripheral vascular diseases, utilizing multitechnical procedures (C)
GEORGE O. GEY, M.D., *Director, Tissue Culture Research Laboratory, Department of Surgery*, Johns Hopkins Hospital, Baltimore, Md.	Fellowships for studying the culture of human lung tissue and the effects of known and possible carcinogenic agents upon such tissue
JAMES GORE, M.D., *Chief, Laboratory Service*, Veterans Administration Hospital, West Roxbury, Mass.	Interactions of arterial acid mucopolysaccharides

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GRANTEE AND INSTITUTION	PROJECT TITLE
GERTRUDE Y. GOTTSCHALL, PH.D., *Assistant Professor of Biochemistry, Department of Pathology and Microbiology,* The Rockefeller Institute for Medical Research, New York, N. Y. (see Clarke)	Proteolytic activities of the white blood cells of man and the effect on white blood cell activities of carcinogens, nutrition and other influences (C)
A. CLARK GRIFFIN, PH.D., *Head of Biochemistry Department,* M.D. Anderson Hospital and Tumor Institute, University of Texas Medical Center, Houston.	The effect of exposure to cigarette smoke on the induction of cancer by chemical compounds (C—P)
MORTON I. GROSSMAN, PH.D., M.D., *Associate Clinical Professor of Medicine,* University of California Medical Center, Los Angeles.	The effect of smoking on certain gastric functions (C)
CARL C. GRUHZIT, PH.D., M.D., *Associate in Physiology and Pharmacology,* University of Pennsylvania Graduate School of Medicine, Philadelphia (now Lecturer in Physiology, University of Hong Kong)	Pharmacologic study of nicotine and related alkaloids (C)
H. B. HAAG, M.D., *Professor of Pharmacology,* Medical College of Virginia, Richmond (deceased)	Preparation for publication of a book on the biologic aspects of tobacco and its smoke (C—P)
JOSEPH H. HAFKENSCHIEL, M.D., *Director, Cardiopulmonary Unit,* Lankenau Hospital, Philadelphia, Pa.	Measurement of coronary blood flow, cardiac work and cardiac oxygen and carbohydrate metabolism in normotensive subjects before and after intravenous nicotine and after smoking standard cigarettes (C—P)
RICHARD J. HAVEL, M.D., *Assistant Professor of Medicine,* University of California Medical School, San Francisco.	A study of the effects of smoking and nicotine administration on sympathoadrenal function and fatty acid metabolism
HERBERT R. HAWTHORNE, M.D., *Chairman, Department of Surgery,* University of Pennsylvania Graduate School of Medicine, Philadelphia.	Attempts to induce pulmonary neoplasms in experimental animals by exposure of the tracheobronchial system to tobacco smoke (C)
CLARK W. HEATH, M.D., *Professor of Medicine and Director of Health Services,* Tufts University, Medford, Mass. (see Farnsworth and McArthur)	Personality and smoking in college graduates: a fifteen-year follow-up study (C—P)
PAULINE HEIZER, PH.D., *Research Associate in Cytology and Cytochemistry,* San Francisco Institute of Medical Sciences, San Francisco, Cal. (see Richards)	A comparative study of early histological and DNA changes in the epidermis of two strains of mice (C57 Blacks and Swiss Websters) after daily applications of whole cigarette smoke condensate (alone and combined with croton oil) and the carcinogens 20-methylcholanthrene and 3,4-benzpyrene (C)

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GRANTEE AND INSTITUTION	PROJECT TITLE
LAWRENCE L. HESTER, JR., M.D., *Professor and Chairman, Department of Obstetrics and Gynecology,* Medical College of South Carolina, Charleston.	The relationship of the use of tobacco products to the outcome of pregnancy (C)
EBBE CURTIS HOFF, PH.D., M.D., *Professor and Chairman, Department of Neurological Science,* Medical College of Virginia, Richmond.	Cerebral autonomic changes produced by tobacco smoke, nicotine or cotinine, a metabolite of nicotine
RUSSELL L. HOLMAN, M.D., *Professor and Head, Department of Pathology,* Louisiana State University School of Medicine, New Orleans. (deceased, see McGill and Strong)	Pathologic—anatomic study of cellular changes in human bronchi (C) The influence of tobacco smoking on acute myocardial infarction (C)
E. HOMBURGER, M.D., *President,* Bio-Research Institute, Inc., Cambridge, Mass.	Studies on carcinogenesis and the bioassay of carcinogenic agents (P) Comparative studies of effects of various tobacco smoke condensates on skins of mice
ROBERT W. HULL, PH.D., *Assistant Professor of Zoology,* Northwestern University, Evanston, Ill.	Photodynamic activation of carcinogenic hydrocarbons: (a) standardization of assay techniques utilizing protozoa; (b) investigation of the mechanisms of activation and response to aromatic carcinogens by protozoa
JERRY HART JACOBSON, M.D., *Director of Electrophysiology,* New York Eye and Ear Infirmary, New York, N. Y.	A comparison of electroretinography as a means of evaluating the effect of vasoconstrictor drugs upon cerebral and retinal circulation with other techniques for this determination (C)
JULIUS H. JACOBSON II, M.D., *Associate Professor of Surgery and Director of Surgical Research,* College of Medicine, University of Vermont, Burlington.	Lung homotransplantation (C)
MURRAY E. JARVIK, PH.D., *Associate Professor of Pharmacology,* Albert Einstein College of Medicine, Bronx, N. Y.	Pilot study of habituation to nicotine by means of rhesus monkeys
ANDREW A. KANDUTSCH, PH.D., *Staff Scientist,* Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me.	To determine to what extent tobacco 'tar' mimics the action of carcinogenic hydrocarbons in the skin and other tissues (C)
ANCEL KEYS, PH.D., *Professor of Physiological Hygiene and Director, Laboratory of Physiological Hygiene,* University of Minnesota School of Public Health, Minneapolis.	Characteristics of men, including smoking, in populations differing in the incidence of coronary heart disease (C—P)
JOSEPH B. KIRSNER, M.D., *Professor of Medicine,* University of Chicago School of Medicine, Chicago, Ill.	The effect of tobacco smoking upon basal gastric secretions in man (C)

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GRANTEE AND INSTITUTION	PROJECT TITLE
KENNETH P. KNUDTSON, M.D., *Assistant Chief, Laboratory Service,* Veterans Administration Hospital, Seattle, Wash.; *Professor of Pathology,* University of Washington Medical School, Seattle.	Pathologic—anatomic study of cellular changes in human bronchi (C—P)
ALVIN I. KOSAK, PH.D., *Associate Professor of Chemistry,* Washington Square College, New York University, New York, N. Y.	The isolation and identification of certain lower-boiling components of cigarette smoke (C)
ROBERT A. KUHN, M.D., *Associate Professor of Neurology and Neurosurgery,* New York Medical College, New York, N. Y.	Possible effects of tobacco upon cerebral circulation
MARVIN KUSCHNER, M.D., *Professor of Pathology,* New York University College of Medicine; *Director of Pathology,* Bellevue Hospital, New York, N. Y.	Pathologic—anatomic study of cellular changes in human bronchi (C)
THOMAS C. LAIPPLY, M.D., *Associate Professor of Pathology,* Northwestern University Medical School, Chicago, Ill.	Pathologic—anatomic study of cellular changes in human bronchi (C)
PAUL S. LARSON, PH.D., *Professor of Pharmacology;* Medical College of Virginia, Richmond. (see McKennis)	Enzymatic transformations of nicotine and related compounds (P) The possible effect of tobacco smoke and nicotine on ascorbic acid metabolism
GUSTAVE A. LAURENZI, M.D., *Assistant Professor of Medicine,* Seton Hall College of Medicine, Jersey City, N. J.	Studies in bronchitis: a correlated investigation of (a) the effect of smoking on the bacteriology of the respiratory tract of humans, and (b) the effect of cigarette smoke and sulfur dioxide (air pollutant) on the clearing of bacteria from the respiratory tracts of small animals (mice, rats)
CECILIE LEUCHTENBERGER, PH.D., *Senior Biologist and Cytochemist,* Sias Memorial Laboratories, Brooks Hospital, Brookline, Mass. (In residence at Institut für Allgemeine Botanik, Eidgenossische Technische Hochschule, Zurich, Switzerland)	A correlated histological, cytological and cytochemical study of the tracheobronchial tree of mice exposed to cigarette smoke (P)
ESTEN O. LINDSETH, M.D., *Surgical Service,* Veterans Administration Hospital, Minneapolis, Minn.	Measurement of the differential blood flow in the mammalian lung during the acute period of smoke inhalation, using the open chest animal and the method and principle of gamma emitting radioactive graded microspheres
ROBERT H. LINNELL, PH.D., *Associate Professor of Chemistry,* University of Vermont, Burlington (now at Scott Research Laboratories, Perkasie, Pa.)	The oxidation of nicotine by gaseous oxygen: mechanism, products and kinetics (C—P) The autoxidation of nicotine

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GRANTEE AND INSTITUTION	PROJECT TITLE
J. P. LONG, PH.D., *Associate Professor of Pharmacology*, State University of Iowa, College of Medicine, Iowa City.	Cardiovascular effects of nicotine
DAVID E. MANN, JR., PH.D., *Associate Professor of Pharmacology* Temple University School of Pharmacy, Philadelphia, Pa.	Effect of tobacco smoke and tobacco residues on methylcholanthrene-induced skin carcinogenesis in mice (C)
CHRISTOPHER M. MARTIN, M.D., *Assistant Professor of Medicine and Director, Division of Infectious Diseases*, Seton Hall College of Medicine, Jersey City, N. J.	Possible interactions of viruses and substances in tobacco smoke condensate (P)
CHARLES C. McARTHUR, PH.D., *Psychologist to the University Health Services*, Harvard University, Cambridge, Mass. (see Heath and Farnsworth)	Social and personal determinants of smoking behavior (C—P) The social mediation of smoking behavior (C)
CHARLES B. McCANTS, PH.D., *Associate Professor of Soils*, School of Agriculture, North Carolina State College, Raleigh.	Arsenic content of soils and absorption by the tobacco plant (C—P)
HENRY C. McGILL, JR., M.D., *Acting Head, Department of Pathology*, Louisiana State University School of Medicine New Orleans. (see Holman and Strong)	The effects of environmental factors on development of atherosclerosis as revealed by autopsy of accident victims
FORDE A. McIVER, M.D., *Assistant Professor of Pathology*, Medical College of South Carolina, Charleston.	Environmetal factors and pulmonary disease. I. Asbestos dust
MURRAY B. McKEE, M.D., *Associate Professor of Medicine*, Medical College of South Carolina, Charleston.	Study of lung function in smokers and nonsmokers (C—P)
HERBERT McKENNIS, JR., Ph.D., *Professor of Pharmacology*, Medical College of Virginia, Richmond (see Larson)	Enzymatic transformations of nicotine and related compounds
VICTOR A. McKUSICK, M.D., *Associate Professor of Epidemiology and Chief, Division of Medical Genetics*, Johns Hopkins University School of Medicine, Baltimore, Md.	A combined genetic, physiologic, clinical and epidemiologic study of Buerger's disease
JAMES G. MILLER, M.D., PH.D., *Professor of Psychiatry and Psychology; and Director, Mental Health Research Institute*, University of Michigan, Ann Arbor.	The behavioral effects of smoking under stress (C)
HUGH MONTGOMERY, M.D., *Associate Professor of Medicine*, University of Pennsylvania Medical School, Philadelphia.	Influence of tobacco smoking on the blood flow of skin and of muscles of extremities in sympathectomized and unsympathectomized subjects (C) Influence of nicotine (i.v.) and tobacco smoking on blood flow in human skin and skeletal muscle (C—P)

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GRANTEE AND INSTITUTION	PROJECT TITLE
P. O'B. MONTGOMERY, JR., M.D., *Associate Professor of Pathology*, University of Texas, Southwestern Medical School, Dallas.	Investigation of the role of the nucleolus in the normal and the malignant cell (P)
GEORGE E. MOORE, PH.D., M.D., *Director*, Roswell Park Memorial Institute, Buffalo, N. Y. (see Bock)	An investigation of the physiological effects of direct inhalation of tobacco smoke by laboratory animals and the study of the biological response of laboratory animals to continuous ingestion of diet-tobacco product mixtures (C)
HURLEY LEE MOTLEY, M.D., *Professor of Medicine and Director, Cardio-Respiratory Laboratory*, University of Southern California School of Medicine, Los Angeles.	A study of the effects of smoking on pulmonary function (C—P)
WILLIAM S. MURRAY, SC.D., *Research Associate*, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me.	The production of genetically controlled animals and tumors for use in experimental research on tobacco in relation to health (C)
	Studies of the mammary tumor-promoting qualities of a virus-like principle, under varying hormonal and aging conditions
DONALD M. PACE, PH.D., *Professor of Physiology and Director, Institute for Cellular Research*, University of Nebraska, Lincoln.	Fellowship for training in tissue culture techniques (C)
	Study of the effects of tobacco smoke constituents on various strains of tissue cells cultivated *in vitro* (P)
EDWARD W. PELIKAN, M.D., *Associate Professor of Pharmacology and Experimental Therapeutics*, Boston University School of Medicine, Boston, Mass.	A study of structure-activity relationships among drugs which affect nicotine-sensitive physiological mechanisms (P)
OTAKAR J. POLLAK, M.D., PH.D., *Executive Director*, Dover Medical Research Center, Inc., Dover, Del.	Possible effect of tobacco derivatives on arterial and myocardial tissue cultures (P)
C. M. POMERAT, PH.D., *Director of Biological Research*, Pasadena Foundation for Medical Research, Pasadena, Cal.	Fellowships for studying the culture of human lung tissue and the effects of known and possible carcinogenic agents upon such tissue (C—P)
H. R. PRATT-THOMAS, M.D., *Dean and Professor of Pathology*, Medical College of South Carolina, Charleston.	Pathologic—anatomic study of cellular changes in human bronchi (C—P)
	Application of a new bioassay technique in examination of cigarette smoke condensates for possible carcinogens (C—P)
	Carcinogenesis in the laboratory animal: a comparison of species response to standardized sites of application

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